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Office of the Secretary  
Federal Communications Commission  
Washington D.C. 21554

Subject: PR Docket No. 93-199

Gentlemen:

This letter constitutes comments of Honeywell, Inc., to the Commission's Notice of Proposed Rulemaking contained in PR Docket No. 93-199, concerning implementation of International Civil Aviation Organization technical requirements applicable to instrument landing system localizer receivers and VHF omnidirectional range receivers.

We believe the proposed rules are seriously flawed in their failing to incorporate receiver performance requirements and in their improper use of technical terminology, and that the supporting information is seriously flawed in its interpretation of law and in its gross understatement of adverse economic impacts. Correcting these deficiencies and errors would substantially alter the proposal. We request, therefore, that this Notice of Proposed Rulemaking be withdrawn.

The following detailed comments are classified in technical, legal and logical, and economic sections.

Technical considerations

The instrument landing system, as defined by the International Civil Aviation Organization (ICAO), consists of three radio-frequency elements, operating in three distinct spectral segments. These are the ILS localizer, the ILS glide slope, and the marker beacons. The proposed rules, and the supporting discussion, repeatedly refer to the "ILS receiver," and once, even, to the "VOR localizer receiver." With regard to interference to ILS signals from the FM broadcast service, ICAO Annex 10 addresses only the ILS localizer, since it is the only one of the ILS elements spectrally adjacent to the FM broadcast band. To be technically definitive, then, every reference to an "ILS receiver" in a rule would have to specifically refer to the ILS localizer receiver.

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Paragraph 2.(d)(2) of the Proposed Rules incorrectly cites the title of RTCA DO-196 as "Minimum Operational Performance Standards for Airborne VOR Localizer Receiving Equipment..." DO-196, in fact, addresses VOR receivers. The VHF omnidirectional range (VOR) system is technically quite different from the ILS localizer element. The only commonality between ILS localizer and VOR is that they share interleaved channel assignments within the frequency band. A consistent rule would have to rigorously preserve the correct document titles and the proper designations of the two different navigation systems addressed.

Paragraph 2.(b) of the Proposed Rules refers to "... the desired ILS/VOR localizer frequency." This is another instance of the proposal's confusion of the two different systems. This should, apparently, have read, "... the desired VOR or ILS localizer frequency."

Paragraph 2.(d) of the proposed rule stipulates that the equipment manufacturer must use the test procedures of RTCA DO-195 and RTCA DO-196, incorporating these documents by reference. Nowhere, however, does the proposed rule stipulate the receiver performance requirements when the interfering signals are applied. The RTCA documents do include performance requirements. We assert, however, that merely incorporating the documents by reference, with the specific requirement that the test procedures be used, but without a specific requirement that the performance requirements be met, does not constitute a definition of the receiver performance requirements. Without performance requirements, a rule such as this would be nugatory.

The VOR or ILS localizer receiver is only one of many elements that can generate intermodulation products that may fall on VOR or ILS localizer frequencies. The front ends of other airborne receivers and the final stages of airborne transmitters have both been known to generate and reradiate interference when exposed to strong signals intercepted by their antennas. Additionally, corroded metal-to-metal joints on the aircraft, or similar joints on terrestrial buildings or artifacts near the broadcast antennas, can and do produce intermodulation products. It is difficult to see how the FCC would endeavor to regulate those interference sources, and that reduces the potential effectiveness of a rule such as that proposed.

Legal and logical considerations

Section II. Background of the Notice includes a quote from the 1982 CCIR report on compatibility between the aviation and broadcast services, stating the desirability of airborne system characteristics that would address rejection of unwanted, out-of-band signals. The FCC is apparently using this quote as partial justification for issuing the NPRM. We point out, however, that FAA Technical Standard Orders have, for decades, included requirements for rejection of out-of-band signals. The specific requirements for rejection of FM broadcast intermodulation interference and for desensitization by FM broadcast signals were added shortly after ICAO established the limits in Annex 10.

The additional statement in II.4. of the Notice, that the existing process of minimizing interference to the aviation service is "onerous" to broadcast interests, merits comment. Careful allocation of frequencies to entertainment businesses to minimize interference to a safety-related service is better characterized as "prudent" than "onerous."

We agree with the Air Transport Association and Aeronautical Radio, Inc., in questioning the Commission's authority to impose technical standards on aviation receivers. The assertion in the Initial Regulatory Flexibility Analysis that this rule would not overlap other Federal Rules is incorrect. The Federal Aviation Administration regulations and its Technical Standard Orders already address VOR and ILS localizer receiver performance. The FAA regulations better address the overall system considerations, and FAA has both the authority and the resources to administer its regulations to achieve satisfactory in-flight navigation system performance.

We question the assertion that FCC has express authority to implement ICAO recommendations. At issue here is not a question of radio communication, but one of technical standards for airborne navigation systems. The Federal Aviation Administration is the appropriate federal entity to promulgate and administer such technical requirements. The fact that this proposal addresses only two of the services in the 108 through 137 MHz aviation band, while ignoring the VHF air-to-ground communication service (which is addressed in ICAO Annex 10), raises questions about the real motive for issuing this proposal. Given the realities of flight operations, one can reasonably argue that air-to-ground communication is at least as critical to aviation safety as is navigation system performance.

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Section III. of the Notice contains several erroneous statements, and others that show lack of knowledge about the manner in which flight operations are conducted.

The assertion of III.6. that this rule is necessary to protect international flight operations amounts to penalizing the many, who do not operate internationally, for the benefit of the relative few who do. A more reasonable approach would be a Federal Aviation Regulation requiring carriage of receivers complying with the intermodulation standards of RTCA DO-195 and DO-196 in aircraft operating internationally on or after 1 January 1998.

There is no operational reason to set 2005 as the cutoff date for aircraft operating domestically under visual flight rules. Each pilot operating under VFR is required to visually maintain separation from other aircraft.

The statement that FAA requires older receivers that do not meet the new ICAO technical standards to "be identified by reference to older TSOs on equipment labels" is misleading and inflammatory. Receivers that satisfied the TSO requirements at the time of their design could, when approved, be identified under those then-current TSOs. Each new TSO has, for decades, carried a statement that equipment previously approved under older TSOs could continue to be identified under its original TSO authorization.

#### Economic considerations

Honeywell has, for some time, been aware of the ICAO recommendation that receivers installed after 1 January 1995 meet the new intermodulation standards. We have planned to execute the design work in the latter part of 1993 and early 1994, so we can be delivering compliant receivers in time for installation agencies to meet the ICAO deadline for aircraft to be delivered in Europe. No business sensibly spends development funds before the product is needed. There has been no customer-driven pressure for this more stringent receiver performance requirement, so we have scheduled the development work to meet the ICAO requirement.

We cannot meet the Commission's proposed deadline of 1 January 1994. For the Commission to release an NPRM on 14 July 1993 with a compliance date five and one-half months away shows inadequate

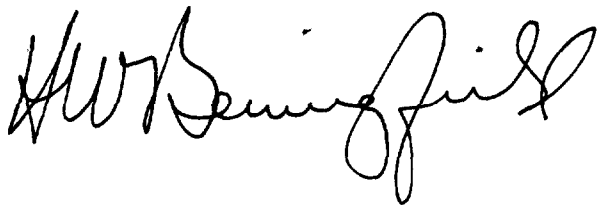
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appreciation of the realities of designing and proving a product, obtaining FAA approval as well as those of numerous foreign airworthiness authorities, obtaining components, and manufacturing and delivering a product.

Imposition of this deadline would result in a period of several months in which we could not deliver our VOR/ILS navigation system. This would impose a substantial economic penalty on Honeywell. It would, consequentially, impose a similar penalty on aircraft manufacturers, domestic and foreign, who would be unable for some time to deliver new airplanes, since they would have to test, prove performance, and certify with other receivers. In fact, no VOR/ILS localizer receiver of the types used in most business jet airplanes and many regional airline airplanes presently meets the ICAO standard, so there would be no suitable alternative for the aircraft manufacturers. The clear results would be to worsen the existing economic depression in the avionics and aircraft industries and to further erode U.S. exports.

Separately, since the Federal Aviation Administration already has both regulations and technical requirements for receiver performance as well as for installed system performance, this proposed rule is unnecessary and redundant. The sole effect of adopting it, even with the appropriate date of 1 January 1995, would be to add to avionics manufacturers' costs, to account for the unnecessary notification of both FAA and FCC, without providing any benefit to users.

In summary, the Notice and the Proposed Rules are technically defective, of doubtful legal basis, economically devastating, and of no genuine benefit. As a minimum, the compliance date for manufacture of new VOR and ILS localizer receivers that meet the ICAO standard must be changed to match the ICAO recommendation of 1 January 1995. Preferably, the notice should be withdrawn.

A handwritten signature in dark ink, appearing to read "H. W. Benningfield". The signature is fluid and cursive, with a large, stylized "H" and "W" at the beginning.